

OPINIONS AND DECLARATIONS RENDERED BY THE INTER- NATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

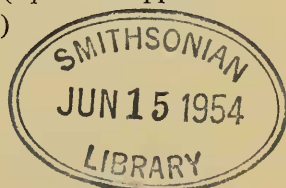
FRANCIS HEMMING, C.M.G., C.B.E.

Secretary to the Commission

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OPINION 226

Suppression, under the Plenary Powers, of the generic name *Bilharzia* Meckel von Hemsbach, 1856, for the purpose of validating the generic name *Schistosoma* Weinland, 1858 (Class Trematoda) (*Opinion* supplementary to *Opinion* 77)



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INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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OPINION 226

SUPPRESSION, UNDER THE PLENARY POWERS, OF THE
GENERIC NAME "BILHARZIA" MECKEL VON
HEMSBACH, 1856, FOR THE PURPOSE OF
VALIDATING THE GENERIC NAME
"SCHISTOSOMA" WEINLAND, 1858
(CLASS TREMATODA)("OPINION"
SUPPLEMENTARY TO
"OPINION" 77)

RULING :—(1) The generic name *Bilharzia* Meckel von Hemsbach, 1856, is hereby suppressed for the purposes of the Law of Priority but not for those of the Law of Homonymy.

(2) The generic name *Schistosoma* Weinland, 1858, placed on the *Official List of Generic Names in Zoology* in *Opinion 77*, is hereby confirmed in its position thereon.

(3) The generic name *Bilharzia* Meckel von Hemsbach, 1856, as suppressed under (1) above, and its junior homonym *Bilharzia* Cobbold, 1859, are hereby placed on the *Official Index of Rejected and Invalid Generic Names in Zoology* as Names Nos. 35 and 36.

I.—THE STATEMENT OF THE CASE

On 14th February 1938 Dr. H. Vogel (*Institut für Schiffs- und Tropenkrankheiten, Hamburg, Germany*) submitted to the International Commission on Zoological Nomenclature an application for a Ruling that the name *Bilharzia* Meckel von Hemsbach, 1856 (a name which had hitherto been overlooked), should be accepted in place of the name *Schistosoma* Weinland, 1858, over which it had two year's priority. The following is an English translation

of Dr. Vogel's application as slightly expanded in the light of subsequent correspondence :—

On the relative status of the names " *Bilharzia* " Meckel von Hemsbach, 1856, and " *Schistosoma* " Weinland, 1858 (Class Trematoda, Order Digenea)

By H. VOGEL

(*Institut für Schiffs- und Tropenkrankheiten, Hamburg.*)

Has the generic name *Bilharzia* Meckel von Hemsbach, 1856 (originally spelt *Billharzia* instead of *Bilharzia*, i.e. with a double "l" through what is obviously a spelling mistake), or *Schistosoma* Weinland, 1858, validity under the International Code ?

The original references to the above names are as follows :—

- (a) *Billharzia* (recte *Bilharzia*) Meckel von Hemsbach, 1856, *Mikrogeologie* : 114 (Über die Concremente im thierischen Organismus von Heinrich Meckel von Hemsbach. Nach dem Tode des Verfassers herausgegeben von Dr. Th. Billroth, Berlin im Juli 1856). (Meckel died on 30th January 1856.)
- (b) *Schistosoma* Weinland, 1858, *Human Cest.* : 87.
- (c) *Bilharzia* Cobbold, 1859, *Trans. linn. Soc. Lond.* 22 (4) : 363—366.

The type of each of the above genera is *Distomum haematobium* Bilharz, 1852, in Siebold, *Z. wiss. Zool.* 4 (1) : 59—62.

Meckel writes in his *Mikrogeologie* (: 114), published in July 1856 : " Bilharz beschrieb zuerst in v. Siebold und Kölliker's *Zeitschr. f. Zoologie*, 1852, einen neuen Eingeweidewurm des Menschen, sehr den Distomen ähnlich und deshalb von ihm *Distomum haematobium* genannt. Der Artname ist sehr bezeichnend, der Gattungsname darf nicht füglich *Distoma* bleiben, ist durch *Bilharzia* zu ersetzen. Dies Geschlecht weicht von allen bisher bekannten Arten von Trematoden ab durch getrenntes Geschlecht mit dem idealen Monogamie-Verhältnis, dass das Männchen sein kleines Weibchen mit sich trägt (im Canalis gynaecophorus)". On page 113 he talks about " Billharzien-Eiern " and on page 189 of " *Bilharzia haematobia* (*Distomum haem.*) ".

The chief reason which induces me to stand for the introduction of the old name *Bilharzia* is to honour the memory of Th. M. Bilharz, and to give expression to the appreciation of his great merits. As is known, Bilharz not only discovered the parasite, but also connected it for the first time with the symptoms of the disease. Apart from this he was the discoverer of two other human parasites, *Hymenolepis nana* and *Heterophyes heterophyes*, and the students of natural science

in his time were well acquainted with his name through his pioneer work on the electric organ of the "Zitterwels".¹ At the age of 37 Bilharz died of typhoid, while carrying out his researches. The name *Bilharzia*, which was formerly much in use, was gradually superseded by *Schistosoma* in the literature, as it was erroneously supposed that this name had the right of priority. In spite of this, the name *Bilharzia* is today still well known to all parasitologists and especially to doctors dealing with tropical diseases. Up to this day, the disease, when not called Schistosomiasis, is called either Bilharziosis or Bilharziasis. In the last (1935) edition of his widely read "Manual of Tropical Diseases" Manson-Bahr used the old names *Bilharzia haematobia*, *B. mansoni* and *B. japonica*. If I support the re-introduction of the old name *Bilharzia*, this does not mean that scientific men would have to deal with a name very much out of use, having fallen into oblivion and then been dug up again.

The supersession of the old name *Bilharzia* has been regretted by many workers. As early as 1896 (*Mém. Inst. égypt. 1896* : 158) Looss urged that the name *Bilharzia* should be retained in honour of its discoverer and he even went so far as to express the view that an exception to the Law of Priority would be justified in this case. (The existence of Meckel's prior *Bilharzia* of 1856 was obviously not known to Looss when he made these observations.) My teacher Fülleborn also frequently expressed in his lectures his regret that the name *Bilharzia* should have been displaced. In 1932 Leiper wrote : " Those, who regretted the displacement of the generic name *Bilharzia* Cobbold, 1859, by *Schistosoma* Weinland, 1858, under the Law of Priority will rejoice in the restoration of *Bilharzia* Meckel, 1856, under the same Law " (*Trop. Dis. Bull. 29* : 168).

I am convinced that I am right in believing that students of natural science who support the retention of old-established names will welcome the restoration of the old name *Bilharzia* in its rightful place, which was once disputed as a consequence of an error as regards the question of priority. I desire, therefore, to ask the International Commission to be good enough to give this matter their renewed attention.

II.—THE SUBSEQUENT HISTORY OF THE CASE

2. On receipt, the documents relating to the present case were given the Registered Number Z.N.(S.) 138. It had not been found possible to advance the consideration of the present application by the time that the outbreak of war in Europe in

¹ The species here referred to is the " Electric-Wels " or " Electric Catfish " of the Nile.

September 1939 led to the evacuation of the records of the International Commission from London to the country as a precaution against the risk of destruction through air raids. The Secretariat in London was re-opened in 1942 and steps were immediately taken to establish the *Bulletin of Zoological Nomenclature* as a means for bringing to the attention of zoologists applications submitted to the International Commission for decision. Work was at once started on outstanding applications with a view to arranging for their publication in the newly established *Bulletin*. In the present case no formal statement of the case had been submitted by Dr. Vogel, and it was judged that the best course would be to publish a note consisting mainly of Dr. Vogel's letter of 29th April 1938 (which dealt with the problem in greater detail than did his original application of 14th February 1938) supplemented by information of certain points on which, in response to a request by the Secretary, he had supplied additional particulars in a letter dated 29th April 1938. A translation from German into English was kindly made for the Commission by Dr. Karl Jordan, at that time its President. At the same time, Mr. Francis Hemming, as Secretary to the Commission, judged it desirable that there should be published with Dr. Vogel's application a brief note by himself, (1) explaining the status, as the Rules then stood, of a name which, like *Schistosoma* Weinland, 1858, had been placed on the *Official List of Generic Names in Zoology* but which was later found to be an objective or subjective junior synonym of some older name (in the present case, *Bilharzia* Meckel von Hemsbach, 1856), (2) pointing out that in such a case the only course open to the Commission was to choose between using its Plenary Powers to validate the erroneous entry on the *Official List* on the one hand, or, on the other hand, deleting the name in question from the *Official List*. Mr. Hemming concluded by making a general appeal to specialists for advice as to the choice to be made in the present case. The following is the text of Mr. Hemming's note :—

**On the status of the generic name "Schistosoma" Weinland, 1858
(Class Trematoda, Order Digenea) in relation to "Opinion" 77**

By FRANCIS HEMMING, C.M.G., C.B.E.

(Secretary to the International Commission on Zoological Nomenclature.)

The International Commission on Zoological Nomenclature has the power (granted to it by the Ninth International Congress of Zoology at

Monaco in 1913) to place nomenclatorially available names (with their types) on the *Official List of Generic Names in Zoology*. When such a name is placed on the *Official List*, that name and no other is the correct name for the genus in question and the type of the genus is the species indicated in the *Official List*.

2. Further, the International Commission has the power, also conferred upon it by the Ninth International Congress of Zoology at Monaco in 1913, to suspend the Rules in certain cases. When the International Commission uses the Plenary Powers so conferred upon it either to validate an otherwise invalid name or to designate as the type of a genus some species other than that which is the type under the International Code, the Commission has the power to place the name so validated and with the type so designated on the *Official List* and such action is final and not subject to revision.

3. The International Commission does not, however, possess—nor would it be reasonable that it should possess—the power to place on the *Official List* a name which is invalid under the Code, unless the Commission first uses its Plenary Power to validate the name in question.

4. It follows, therefore, that, if it can be shown that, through a given case having been incompletely presented to the Commission or for some other cause, a nomenclatorially invalid name has been placed on the *Official List*, the decision of the Commission as respects that name is itself invalid, since it is *ultra vires* the powers of the Commission. In such a case, the *Opinion* (or portion or an *Opinion*) embodying the decision in question would remain as the record of the view of the Commission at the time that it was adopted but it would have no binding force.²

5. The “statement of the case” submitted by Dr. Vogel in regard to *Bilharzia* (emendation of *Billharzia*) Meckel von Hemsbach, 1856, shows beyond possibility of dispute that the name *Schistosoma* Weinland, 1858, is no more than an objective synonym of *Bilharzia* Meckel von Hemsbach, 1856, of which the same species (*Distomum haematobium* Bilharz, 1852) is the type. It follows, therefore, that, in placing the name *Schistosoma* Weinland, 1858, on the *Official List* in *Opinion 77*, the International Commission committed an error

² The statement in this paragraph regarding the status of names placed on the *Official List of Generic Names in Zoology* was correct at the time when it was written, but the position in this matter was materially altered by a decision taken by the Thirteenth International Congress of Zoology at Paris in 1948 (1950, *Bull. zool. Nomencl.* 4 : 268). Under this decision, the position now is that, where a mistake is found in an entry made in the *Official List*, the generic name concerned is not on that account to be rejected “unless and until the Commission, on having the facts laid before it, shall so direct”. Corresponding protection was given by the same Congress to entries made in the *Official List of Specific Names in Zoology*.

of the kind discussed in paragraph 4 above and acted *ultra vires* their powers.

6. What happened, no doubt, was that at the time when the International Commission had this case under consideration in connection with *Opinion 77*, they were not aware of the existence of the name *Bilharzia* Meckel von Hemsbach, 1856, and believed that the name was first published by Cobbold in 1859. On these premises, the International Commission were correct in concluding that the name *Schistosoma* Weinland, 1858, was the oldest available generic name for *Distomum haematobium* Bilharz, 1852, and, therefore, that the name was eligible for inclusion in the *Official List*. As shown above, the premises on which the International Commission reached this conclusion were, however, incorrect, because of the existence of the name *Bilharzia* Meckel von Hemsbach, 1856, which has two years' priority over *Schistosoma* Weinland, 1858. It should be noted further, that the genus *Bilharzia* Meckel von Hemsbach is monotypical and was, therefore, published with an "indication" as defined in *Opinion 1*³ and accordingly satisfies the requirements of proviso (a) to Article 25 of the International Code.

7. Clearly, it is essential that the above error should be rectified as soon as possible. It would be possible to do this in either of two ways :—

(a) The International Commission could delete the invalid name *Schistosoma* Weinland, 1858, from the *Official List* and could insert in its place the valid name *Bilharzia* Meckel von Hemsbach, 1856 ;

or

(b) The International Commission, if satisfied that the strict application of the Rules as applied to the present case would clearly result in greater confusion than uniformity, could use their Plenary Powers (i) to suppress the name *Bilharzia* Meckel von Hemsbach, 1856, and (ii) to validate the name *Schistosoma* Weinland, 1858, thereby giving retrospectively valid effect to the entry regarding the last-mentioned name in *Opinion 77*.

8. Specialists are, therefore, invited to inform the International Commission which, in their view, of the alternative courses indicated above is the one to be preferred.

³ See 1944, *Opinions and Declarations rendered by the International Commission on Zoological Nomenclature* 1 : 73—86. *Opinion 1* (the *Opinion* here referred to) was cancelled in Paris in 1948, and the provisions of Article 25 which had been dealt with in it were substantially liberalised (1950, *Bull. zool. Nomencl.* 4 : 78—80). Under the revised provisions a generic name published without a verbal diagnosis for the genus so established became an available name (if published before 1st January 1931), even if no type species was designated or indicated and two or more nominal species were referred to the genus so.

3. Dr. Vogel's application and Mr. Hemming's note were sent to the printer in September, 1944 but, owing to difficulties arising from paper rationing, shortage of labour at the printing works and similar causes, publication did not actually take place until 28th February 1947 (Vogel, 1947, *Bull. zool. Nomencl.* 1 : 193—194 ; Hemming, *ibid.* 1 : 195—196).

4. After Dr. Vogel's application had been sent to the printer but some time before it was published, a letter (dated 5th July 1945) was received from Professor R. T. Leiper, M.D., D.Sc., F.R.S. (*London School of Hygiene and Tropical Medicine, Institute of Agricultural Parasitology, St. Albans, Herts, England*), in which Professor Leiper wrote : “ *Schistosoma* must now give way to *Bilharzia* ; vide a Thesis on the Geology of the Human Body, which has recently come to light which antedates *Schistosoma* Weinland and *Bilharzia* Cobbold by several years ”.

5. The publication, in the *Bulletin*, of Dr. Vogel's application and of Mr. Hemming's appeal to specialists for advice elicited twelve letters of comment signed by sixteen specialists. Of the letters so received ten (signed by fourteen specialists) favoured *Schistosoma* as against *Bilharzia*, and two took the opposite view. One of the foregoing communications contained an analysis of usage since the year 1931 which showed that in the 2,052 papers examined the name *Schistosoma* had been used in 1,415 papers and the name *Bilharzia* had been used in only 637 papers. The letters referred to above are given in date order in the following paragraphs.

6. *Comment by Dr. Th. Mortensen (Universitetets Zoologiske Museum, Copenhagen)* : In a letter dated 6th April 1947 Dr. Th. Mortensen (*Universitetets Zoologiske Museum, Copenhagen*) wrote : “ *Bilharzia* should stand ”.

7. *Comment by Dr. H. A. Baylis (British Museum (Natural History), London)* : On 6th June 1947 Dr. H. A. Baylis (*British Museum (Natural History), London*) furnished the following comment :—

I have been turning over in my mind, from time to time, the problem resuscitated by Vogel and by yourself in *Bull. zool. Nomencl.* 1, pt. 9 (Feb. 1947), concerning the names *Schistosoma* and *Bilharzia*. As you have asked for views as to what action should be taken, I feel that perhaps I ought to give you mine, such as it is.

I do not dispute the logic of the argument brought forward by Vogel, but I feel that, once the International Commission has placed a name on the *Official List*, such action should be final and irrevocable, even if a mistake has been made. The purpose of placing names on this list is to prevent arbitrary changes in the future. If the Commission is to go back on its own decision in such a case, there will never be any stability in names at all, and I think the Commission will bring itself into disrepute. Let it by all means do everything possible at the time to see that its decisions are just, but once having given them let it stick to them.

This particular hare has been started more than once already, and it has been very useful to have a clinching argument in the form of a reference to *Opinion 77*, of which the hare-starters have been unaware, or which they have deliberately ignored.

8. *Comment by Dr. W. H. Wright (Chief, Division of Tropical Diseases, National Institute of Health, United States Public Health Service, Bethesda, Maryland, U.S.A.)*: On 11th August 1947, Dr. W. H. Wright (*Chief, Division of Tropical Diseases, National Institute of Health, United States Public Health Service, Bethesda, Maryland, U.S.A.*) wrote as follows:—

The writer was very much interested in the two papers appearing in the February 28, 1947 issue of the *Bulletin of Zoological Nomenclature* relative to the status of the generic name *Schistosoma*.

While there can apparently be no argument concerning the priority of the generic name *Bilharzia*, it would seem to the writer that removal of *Schistosoma* from the *Official List* would create a considerable amount of confusion. As you undoubtedly know, nearly all American literature has made use of the term *Schistosoma* having followed over a long period of years the ruling of the International Commission on the status of this generic name. While there is, of course, lack of uniformity at the present time, in this particular case it would appear that greater confusion would result from the change of the name. I feel, therefore, that it might be better for all concerned if the Commission made no change in the present status of the matter.

9. *Comment by Professor Harold Kirby (University of California, Department of Zoology, Berkeley, California, U.S.A.)*: On 27th October 1947, Professor Harold Kirby (*University of California, Department of Zoology, Berkeley, California, U.S.A.*) wrote as follows:—⁴

In the *Bulletin of Zoological Nomenclature* 1 : 196 you invite expressions of opinion regarding the substitution of *Bilharzia* for *Schistosoma*

⁴ In July 1948 Professor Kirby took part in the discussion on this case at Paris, and then changed his view, voting in favour of the retention of the name *Schistosoma* and the suppression of the name *Bilharzia*.

in the *Official List*. I am in favour of doing this, and I see no sound reason for use of Plenary Powers to suppress *Bilharzia*.

The name *Schistosoma* has come widely into use by parasitologists and medical zoologists, but it seems to me that majority usage should not constitute grounds for abandoning so well-defined a position as that which favors *Bilharzia*.

10. *Comment by Dr. T. W. M. Cameron (Director, Institute of Parasitology, MacDonald College of McGill University, Canada) :* On 10th December 1947, Dr. T. W. M. Cameron (*Director, Institute of Parasitology, MacDonald College of McGill University, Canada*) submitted the following comment :—

With reference to the note in the *Bull. zool. Nom.* 1, pt. 9, p. 196, 1947, I would like to place on record my opinion that the name *Schistosoma* stand as one of the *nomina conservanda*. It is extremely probable that the name *Bilharzia* has strict priority but the whole function of the Rules of Nomenclature is to prevent confusion and to enable zoologists to identify the animal indicated by any given name. I submit that this is the case now with *Schistosoma* and that to change the name to *Bilharzia* again would increase confusion. Every parasitologist knows what is meant by *Schistosoma*—and that—forensic arguments to the contrary notwithstanding—is the function of the Rules.

If, however, one were to admit the desirability of changing the name, it would set a never ending precedent which would completely nullify the value of the *nomina conservanda*. There are many parasites which are described by names in present use, which should, if it were not for the opinions expressed by Commission, be known by entirely different names, *Dracunculus*, *Trichuris*, *Toxocara*, for example, should never have been adopted as valid names. However, they have been and should now remain. I have, myself, in the past been one of the sticklers for the Rule of Priority in these cases but in the case of those names now in every day use in human and veterinary parasitology, I have now accepted the principle that where the strict application of the Rules would lead to confusion, then a generally accepted name should be added to the *nomina conservanda* and used by everyone. I have followed this principle in the new edition of my veterinary parasitology and some names, which are, in my opinion, wrong, are used because of their universal use by others. After all the Rules of Nomenclature were created for the use of zoologists ; to remove names from the *nomina conservanda* would be to reverse this truth.

There is no reason why Bilharz's name should not be used in connection with the disease caused by *Schistosoma haematobium*. This is a medical matter, not a zoological one, and does not really concern the Commission.

11. *Comment submitted jointly by five members of the Staff of the Division of Tropical Diseases, National Institute of Health,*

Bethesda, Maryland, U.S.A. : In December 1947 Mr. Francis Hemming, Secretary to the International Commission, visited the United States for the purpose of holding consultations regarding the subjects to be discussed at the meeting of the International Commission arranged to be held at Paris in July of the following year. While Mr. Hemming was in Washington, the following statement signed by five members of the staff of the Division of Tropical Diseases, National Institute of Health, Bethesda, Maryland, U.S.A., was delivered to him by hand (on 23rd December 1947) :—

The undersigned desire to express to the International Commission on Zoological Nomenclature their views as to the choice of two alternative courses open to the Commission concerning the generic name *Schistosoma* and *Bilharzia*, as outlined by Dr. Francis Hemming (*Bul. zool. Nomenclature*, v. 1, pt. 9, 196 ; 1947). We have attempted in an objective manner to formulate our opinion as to whether deletion of *Schistosoma* Weinland, 1858 from the *Official List* and substitution therein of the name *Bilharzia* Meckel von Hemsbach, 1856 would result in greater confusion than uniformity.

The effect of the change would be felt not only by systematic zoologists but more especially by specialists in human and veterinary parasitology and the audience to whom their publications are addressed. To analyse the early situation as compared with that of recent years, the terminology employed by authors in the titles of their publications which are listed by Khalil in his 1931 "The bibliography of schistosomiasis (bilharziasis)*" has been scanned. *Bilharzia* or bilharziasis appears exclusively in 1163 titles ; *Schistosoma* or schistosomiasis exclusively in 679 titles. To obtain comparable figures on recent terminology, on the other hand, a rapid count has been made of entries dated 1931 to the present year in the subject catalogue of the Index-Catalogue of Medical and Veterinary Zoology, in the files of the Zoological Division, Bureau of Animal Industry, U.S. Department of Agriculture. The results are shown in Table 1 provided herewith. Authors in 28 countries have employed in 637 instances the term *Bilharzia* or its derivatives, as compared with 1415 instances in which they used the name *Schistosoma* and its derivatives. French authors have continued preponderantly the usage *Bilharzia* and bilharziasis ; Italian authors are equally divided. In all other instances the name *Schistosoma* and its derivatives have predominated. This predominance is especially marked in Asia and in the Western Hemisphere ; also if one selects from the table the principal endemic areas, namely, Egypt, South Africa, China, Japan, Brazil, Venezuela, and Puerto Rico, it will be found that the total counts for *Bilharzia* and *Schistosoma* are 243 and 642 titles, respectively.

* Publ. No. 1 The Faculty of Medicine, The Egyptian University, Cairo, 506 pp.

TABLE 1.—Usage since 1931 of terminology *Bilharzia* and bilharziasis as compared with *Schistosoma* and schistosomiasis by authors of various nationalities.

| | Terminology based on | |
|-----------------------|----------------------|--------------------|
| | <i>Bilharzia</i> | <i>Schistosoma</i> |
| Great Britain | 100 | 159 |
| Egypt | 91 | 101 |
| South Africa | 107 | 135 |
| Canada | 1 | 1 |
| India | 1 | 129 |
| New Zealand | 1 | — |
| Australia | — | 5 |
| France | 155 | 76 |
| Germany | 47 | 63 |
| Italy | 62 | 62 |
| Holland | 9 | 25 |
| Belgium | 10 | 42 |
| Portugal | 1 | — |
| Spain | 1 | 11 |
| Switzerland | 1 | 5 |
| Russia | 1 | 2 |
| Turkey | — | 1 |
| China | 1 | 95 |
| Japan | — | 63 |
| Philippine Islands .. | — | 19 |
| Brazil | 6 | 136 |
| Venezuela | 36 | 41 |
| Honduras | — | 1 |
| Yucatan | — | 1 |
| Argentina | — | 1 |
| Puerto Rico | 2 | 71 |
| Cuba | 1 | 1 |
| United States | 13 | 169 |
| | 637 | 1415 |

Honor to the memory of Bilharz and his outstanding achievements may well be perpetuated by a continued use of his name in connection with *Schistosoma haematobium* infection, to which it should rightly be restricted for historical accuracy; this correct usage forms the great bulk of the instances cited under that heading in Table 1. Counterparts of this situation are to be found in connection with other parasitic diseases, as for example, Chagas' disease, caused by *Trypanosoma*

cruzi and Weil's disease, caused by *Leptospira icterohemorrhagiae*. On the other hand, since 1922 when *Schistosoma* was placed on the *Official List*, that name has been the only correct name for the genus in question; the disease as it occurs in the Western Hemisphere and in Asia, and caused by *S. mansoni* and *S. japonicum*, respectively, has been rightly called schistosomiasis. One might give extensive bibliographies as indicated by the figures cited in Table 1. Monographic studies include the following:—

- “Studies on schistosomiasis japonica”, 1924, 339 pp., by Faust and Meleney.
- “Studies on schistosomiasis mansoni in Puerto Rico”, 1927, 1933—34, total 282 pp., by Faust, Hoffman et al.
- “La schistosomiasis mansoni en Venezuela”, 1943, 223 pp., by Ruiz Rodriquez.
- “The diagnosis of schistosomiasis japonica”; “The epidemiology of schistosomiasis japonica in the Philippine Islands and Japan”; “The molluscan intermediate host and schistosomiasis japonica”; and “The control of schistosomiasis japonica”;—four series of papers by members of the Commission on Schistosomiasis of the Army Epidemiological Board.
- “Studies on schistosomiasis”. National Institute of Health Bulletin No. 189 to appear December, 1947, about 212 pp. By the present writers and collaborators.

We are therefore of the opinion that to change from *Schistosoma* to *Bilharzia* as the officially recognised name of the genus in question would result in greater confusion than conformity; we recommend therefore that the International Commission on Zoological Nomenclature use their Plenary Powers to suppress the name *Bilharzia* Meckel von Hemsbach, 1856 and to validate the name *Schistosoma* Weinland, 1858.

W. H. Wright, Chief,
Division of Tropical Diseases

Louis J. Olivier,
Sr. Asst. Scientist

Mabelle O. Nolan
Zoologist

Division of Tropical Diseases, National Institute of Health, Bethesda, Maryland.

Eloise B. Cram,
Medical Parasitologist

Myrna F. Jones,
Zoologist

12. *Comment by Dr. Hugh Parkhurst (Gloucester, Massachusetts, U.S.A.):* on 13th January 1948 Dr. Hugh Parkhurst (*Gloucester, Massachusetts, U.S.A.*) furnished the following comment:—

May I respectfully add my bit to the data submitted by those who favor the suppression of the name *Bilharzia*, in favor of *Schistosoma*?

It seems quite evident to the writer that in view of the enormous recent interest in the members of this genus occasioned by experiences in tropical places during the recent war and the preponderance of references to the genus by the name *Schistosoma*, that much greater uniformity would result if that course of action were to be followed.

It would seem to the writer that in addition to the preponderance of scientific opera in which the name *Schistosoma* is used, some consideration should be given to the fact that this designation and its derivatives are familiar to many of the informed laity. At any rate, such seems to be the case in this country.

13. *Publication by Dr. Eloise Cram in January 1948 of an appeal to interested specialists to communicate to the Commission their views on the present case:* In January 1948 Dr. Eloise Cram (National Institute of Health, Bethesda, Maryland, U.S.A.) published a note (Cram, 9th January 1948, *Science* **107** : 38) drawing attention to the fact that it had been found that the name *Bilharzia*, had been first published by Meckel von Hemsbach in 1856 and therefore had priority over the name *Schistosoma* Weinland, 1858, which the Commission had placed on the *Official List of Generic Names in Zoology* in its *Opinion 77*. At the same time Dr. Cram suggested that specialists should communicate to the Commission statements of their views on the question of the action which should now be taken.

14. *Comment by Dr. M. S. Ferguson (United States Public Health Service, Communicable Disease Center, Atlanta, Georgia, U.S.A.):* On 16th January 1948, Dr. M. S. Ferguson (United States Public Health Service, Communicable Disease Center, Atlanta, Georgia, U.S.A.) furnished the following comment :—

In the latest issue of *Science* a note by Dr. Eloise B. Cram, National Institute of Health, reports that the generic name *Bilharzia* has priority over *Schistosoma*. I am writing to express my opinion as to whether the term *Schistosoma* should be invalidated, deleted from the *Official List*, and *Bilharzia* recognised as the generic name of the blood flukes of medical and veterinary interest. Since the term *Schistosoma* describes the organism included in the genus in question and is being more and more widely used by those working in Tropical Medicine I think it would be most unfortunate if the generic name were changed to *Bilharzia*. It seems to me that here is a place where the International Commission should use its Plenary Powers.

15. *Comment by Professor Ernest Carroll Faust (William Vincent Professor of Tropical Diseases and Hygiene, Tulane University of*

Louisiana, New Orleans, Louisiana, U.S.A.) : On 17th January 1948, the following comment was furnished by Professor Ernest Carroll Faust (*William Vincent Professor of Tropical Diseases and Hygiene and Head of the Division of Parasitology, The Tulane University of Louisiana, New Orleans, Louisiana, U.S.A.*) :—

I am writing you with reference to the possible reconsideration of *Opinion 77* concerning the status of the genus *Schistosoma* Weinland, 1858. It is my understanding that since *Opinion 77* was rendered it has been discovered that the name *Bilharzia* was proposed by Meckel von Hemsbach in 1856. It is understood by strict interpretation of the Law of Priority the name *Bilharzia* is technically the correct one for the species of which *haematobium* is type.

As an individual and representative of a group who have given considerable attention and have spent much time in studying the biological and medical aspects of *Schistosoma* infection, may I respectfully request that your Committee regard the strict application of the Rules of this case as undesirable, since it would lead to a vast amount of confusion. I would suggest that your Commission suppress the name *Bilharzia* and validate *Schistosoma* Weinland, 1858.

If you desire additional information in support of my request please write me and I shall be glad to provide you with supporting arguments.

For your information reference is made to the monographic study on schistosomiasis japonica by Faust & Meleney (1924), similarly to studies on schistosomiasis mansoni in Puerto Rico by Faust and others (1934—1937) and the recent findings of the Commission on Schistosomiasis, Army Epidemiological Board, Office of the Surgeon General, U.S.A., of which I was Director.

16. *Comment by Dr. David S. Ruhe (Surgeon, United States Public Health Service, Communicable Disease Center, Atlanta, Georgia, U.S.A.)* : On 19th January 1948 the following comment was furnished by Dr. David S. Ruhe (*Surgeon, United States Public Health Service, Communicable Disease Center, Atlanta, Georgia, U.S.A.*) :—

We are perturbed by the note in the latest issue of *Science*, reporting the priority of the generic name *Bilharzia* over the name *Schistosoma*. We recognise the importance of primacy in nomenclature ; however, in this case we heartily oppose invoking the principle if it can be avoided. The wartime importance of schistosomiasis has provoked such extensive interest in the study of the disease that whereas changing of the nomenclature before the war would have been a relatively minor task, now it has the importance of a major uprooting process. Moreover, it is our feeling that *Schistosoma* adequately acts as a memory hook because it is so descriptive of the male worm. As a parasitologist and

one interested in medical education, it is my hope that you will very seriously consider and perhaps oppose any change of this nomenclature as suggested.

17. Comment by Professor Deane P. Furman (*Assistant Professor of Parasitology, Division of Entomology and Parasitology, University of California, Berkeley, U.S.A.*): On 20th January 1948 the following comment was furnished by Professor Deane P. Furman (*Assistant Professor of Parasitology, Division of Entomology and Parasitology, University of California, Berkeley, California, U.S.A.*):—

Acting upon the suggestion of Eloise Cram in the January 9th issue of *Science*, I am writing to inform you of my personal opinion concerning future status of the generic name *Schistosoma*.

I believe strict application of the Rules of Zoological Nomenclature should be waived in this instance and the name *Schistosoma* considered as valid. My stand is based on the desire to eliminate the confusion of the literature which I feel would result if the name *Bilharzia* is now accepted as valid.

18. Comment by Professor Charles H. Blake (*Associate Professor of Zoology, Department of Biology, Massachusetts Institute of Technology, Cambridge, Mass., U.S.A.*): On 27th January 1948 the following comment was furnished by Professor Charles H. Blake (*Associate Professor of Zoology, Department of Biology, Massachusetts Institute of Technology, Cambridge, Mass., U.S.A.*):—

I find in *Science*, vol. 107, p. 38 (9 Jan. 1948) a note by Dr. Cram calling attention to the possibility that *Schistosoma* might be removed from the *Official List of Generic Names*. Although not a specialist in this field, I feel strongly that all biologists have the right to be heard as to the principles involved here.

It appears that *Schistosoma* has lain undisturbed on the *Official List* for 25 years. The *List* becomes meaningless if, after such lapse of time, registration can be invalidated by the discovery of a paper so obscure or trivial that it was unknown to competent specialists, such as Stiles and Hassall, or misinterpreted by them and was not brought to general attention for 90 years after its publication.

There seem to be but two bases on which a name may be placed on the *Official List*. (1) The title to the name is clear and hence no objection can be raised. (2) Title is clouded and the Commission acts, in full view of the circumstances, to quiet title. The Commission having acted and registered the name, then, I admit, the maxim *stare decisis* becomes obligatory. This maxim is defined by Baldwin's U.S. ed. of Bouvier's Law Dictionary (1928) as "when a point has

been settled by decision, it forms a precedent which is not afterwards to be departed from". A court view applicable to the present case is that "where a decision relates to the validity of certain modes of transacting business, and a change of decision must necessarily invalidate everything done in the mode prescribed by the former case, . . ., the maxim becomes imperative . . . ; 15 Wisc. 691".

There would appear to be only one basis on which the sort of action originally taken in *Opinion 77* could be reversed, namely, that a public hardship, as opposed to a private hardship, would be wrought by a failure to reverse the original action. The grounds of such reversal must, hence, be both broad and weighty. I submit that the grounds are neither broad nor weighty in the instant case.

As I have hinted above the doctrine of laches applies here. This doctrine is defined as unreasonable delay ; neglect to do a thing or to seek to enforce a right at the proper time. "To constitute laches . . . there must be knowledge, actual or imputable, of the facts which should have prompted action or, if there were ignorance it must be without just excuse" (Baldwin). There certainly seems to be no just excuse for the ignoring of Meckel von Hembach's publication at the time of the original presentation of the case. I, therefore, urge that *Schistosoma* remain on the *Official List*.

19. *View of Professor Kamel Mansour (King Fouad University, Cairo, Egypt)* : After the opening of the Thirteenth International Congress of Zoology at Paris in July 1948 but before the present problem had been considered by the International Commission, Professor Kamel Mansour (*King Fouad University, Cairo, Egypt*) spoke to Mr. Francis Hemming, Secretary to (and at that time Acting President of) the International Commission in regard to this case, indicating that he was in favour of reviving the use of the name *Bilharzia*. Mr. Hemming, in taking note of Professor Mansour's communication, expressed the hope that he would be present at the public meeting of the International Commission at which this case would be considered, so that he could present his views in person. Later, Professor Mansour was elected to be an Alternate Commissioner for the duration of the Paris Session, and it was in this capacity that he took part in the discussion on this case.

20. At Paris in 1948 the International Commission on Zoological Nomenclature suspended its By-Laws for the duration of that Session (1950, *Bull. zool. Nomencl.* **4** : 7—8), and it was in virtue of that decision that the present case was brought before the Commission later during that Session.

III.—THE DECISION OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

21. The present application was considered by the International Commission on Zoological Nomenclature at the Twelfth Meeting of its Paris Session held at the Sorbonne in the Amphithéâtre Louis-Liard on Monday, 26th July 1948 at 1445 hours. This case was presented to the meeting by Mr. Francis Hemming (*Acting President*), who after surveying the comments which had been received in regard to this case, recommended that, in view of the general sense of the advice received, "the Commission should use their Plenary Powers to suppress the name *Bilharzia* Meckel von Hemsbach, 1856, and to validate the name *Schistosoma* Weinland, 1858". The following is an extract from the Official Record of the Proceedings of the International Commission, setting out the discussion which then ensued (1950, *Bull. zool. Nomencl.* 4 : 322) :—

THE ACTING PRESIDENT (MR. FRANCIS HEMMING) said that in response to the invitation contained in the paper published by himself in the *Bulletin of Zoological Nomenclature* in 1947 and of the notices on the subject to which it had given rise in the journal *Science*, 15 specialists had written to him on this subject, of whom one only was in favour of the strict application in this case of the Law of Priority and in consequence of the use of the name *Bilharzia* Meckel von Hemsbach, while 14 were in favour of the use by the Commission of their Plenary Powers to validate the name *Schistosoma* Weinland. Since his arrival in Paris, Professor K. Mansour (Egypt) had spoken to him in regard to this case and had indicated that he was in favour of reviving the use of the name *Bilharzia*. Of the specialists who had communicated their views on this subject, the two who favoured the name *Bilharzia* were British and Egyptian respectively, while of the 14 who favoured the suppression of that name in favour of the name *Schistosoma*, 12 wrote from the United States, one from Canada, and one from Great Britain. The Acting President added that it appeared clear to him that there was an overwhelming consensus of opinion in favour of the validation of the name *Schistosoma* Weinland. The Commission had placed that name on the *Official List* in good faith, believing it to be the

oldest name for this important genus, it being then thought by all concerned that the name *Bilharzia* had not been published until 1859 (by Cobbold), i.e. not until a year after the publication of the name *Schistosoma*. They certainly would not have taken that action at that time, when the name *Bilharzia* (attributed to Cobbold) was in wide use if they had known what the true position was. In the 26 years that had elapsed since the name *Schistosoma* was placed, though erroneously, upon the *Official List*, that name had very largely replaced the name *Bilharzia*; new issues were therefore raised by the discovery that *Bilharzia* was the older name, for it was necessary to consider also the effect on medical literature of a reversal of the practice which for over a quarter of a century had been believed to possess the highest nomenclatorial authority. In view of the general sense of the advice received from interested specialists, he (the Acting President) recommended that the Commission should use their Plenary Powers to suppress the name *Bilharzia* Meckel von Hemsbach, 1856, and to validate the name *Schistosoma* Weinland, 1858.

In the discussion which followed PROFESSOR R. L. USINGER (U.S.A.) supported the proposal that the Plenary Powers of the Commission should be used to validate the name *Schistosoma* which had become deeply embedded in the literature relating to the Trematoda and in medical literature generally. Nothing but confusion would result if it were necessary to revert to the name *Bilharzia*.

PROFESSOR K. MANSOUR (EGYPT) said that this problem was one of special interest to Egyptian zoologists and Egyptian medical men, for it was in Egypt that the disease bilharziasis was of special importance; the name *Bilharzia* was still universally used in Egypt for the Trematode parasite concerned. Now that it was clear that the name *Bilharzia* had priority over the name *Schistosoma*, it should be brought back into universal use.

DR. ELLSWORTH C. DOUGHERTY (U.S.A.) (a member of the Section on Nomenclature present at the meeting) strongly supported the proposal that the name *Schistosoma* should be

validated. Any other course would lead to confusion in medical literature.

COMMISSIONER H. BOSCHMA (NETHERLANDS) expressed support for the proposal that in the circumstances the name *Schistosoma* should be validated, in spite of the fact that at one time the name *Bilharzia* had been much more frequently used.

PROFESSOR K. MANSOUR (EGYPT) said that he recognised that American workers used the name *Schistosoma* in preference to the name *Bilharzia*, but the medical problem involved and therefore the nomenclatorial issue, was of much more direct concern to Egyptian workers who had never used the name *Schistosoma*. He recognised that the balance of opinion was in favour of validating the entry of the name *Schistosoma* on the *Official List*. Nevertheless, this was not a proposal which he could support, and he would feel bound to vote against it.

22. At the close of the discussion recorded in the preceding paragraph, the International Commission took its decision on the present case. That decision is set out as follows in the Official Record of the Proceedings of the International Commission (Paris Session, 12th Meeting, 10) (1950, *Bull. zool. Nomencl.* 4 : 319—323) :—

THE COMMISSION, Professor Mansour dissenting, agreed:—

- (1) to use their Plenary Powers :—
 - (a) to suppress for the purposes of Article 25 the generic name *Bilharzia* Meckel von Hemsbach, 1856 (Class Trematoda) ;
 - (b) to validate the name *Schistosoma* Weinland, 1858 (Class Trematoda) ;
- (2) to confirm the entry of the name *Schistosoma* Weinland, 1858, on the *Official List of Generic Names in Zoology* ;
- (3) to render an *Opinion* recording the decisions specified in (1) and (2) above.

23. Under the provisions relating to the *Official Index of Rejected and Invalid Generic Names in Zoology*, the International Commission is required to place thereon every generic name which it either rejects under the Plenary Powers or declares to be invalid. In the present instance, the entry on the *Official Index* of *Bilharzia* Meckel von Hemsbach, 1856 (suppressed under the Plenary Powers), and of its junior homonym, the better-known name *Bilharzia* Cobbold, 1859, was inadvertently omitted from its decision as set out in the Official Record of its Proceedings in the passage quoted in paragraph 22 above. This omission has been rectified in the Ruling given in the present *Opinion*.

24. The following are the original references for the names which appear in the Ruling given in the present *Opinion* :—

Bilharzia Meckel von Hemsbach, 1856, *Mikrogeologie* : 114
Bilharzia Cobbold, 1859, *Trans. linn. Soc. Lond.* **22** (4) : 363—366
Schistosoma Weinland, 1858, *Human Cestoides* : 87

25. The decision taken in the present case was reported to, and approved by, the Section on Nomenclature of the Thirteenth International Congress of Zoology, Paris, 1948, at its Fourth Meeting held on 26th July 1948 (1950, *Bull. zool. Nomencl.* **5** : 98—100).

26. The Ruling given in the present *Opinion* was concurred in by the following fifteen (15) of the sixteen (16) Commissioners and Alternate Commissioners present at the Paris Session, namely :—

Beltrán *vice* Cabrera ; Boschma ; Bradley ; di Caporiacco ; Hemming ; Hindle *vice* Jordan ; Jorge *vice* do Amaral ; Kirby *vice* Stoll ; Lemche *vice* Dymond ; Metcalf *vice* Peters ; Riley *vice* Calman ; Rode ; Spärck *vice* Mortensen ; van Straelen *vice* Richter ; Usinger *vice* Vokes.

27. The decision taken in the present case was dissented from by one Alternate Commissioner, namely : Mansour *vice* Hankó.

28. The prescribed procedures were duly complied with by the International Commission on Zoological Nomenclature in

dealing with the present case, and the present *Opinion* is accordingly hereby rendered in the name of the said International Commission by the under-signed Francis Hemming, Secretary to the International Commission on Zoological Nomenclature, in virtue of all and every the powers conferred upon him in that behalf.

29. The present *Opinion* shall be known as *Opinion* Two Hundred and Twenty-Six (226) of the International Commission on Zoological Nomenclature.

DONE in London this Third day of December, Nineteen Hundred and Fifty-Three.

*Secretary to the International Commission
on Zoological Nomenclature*

FRANCIS HEMMING

